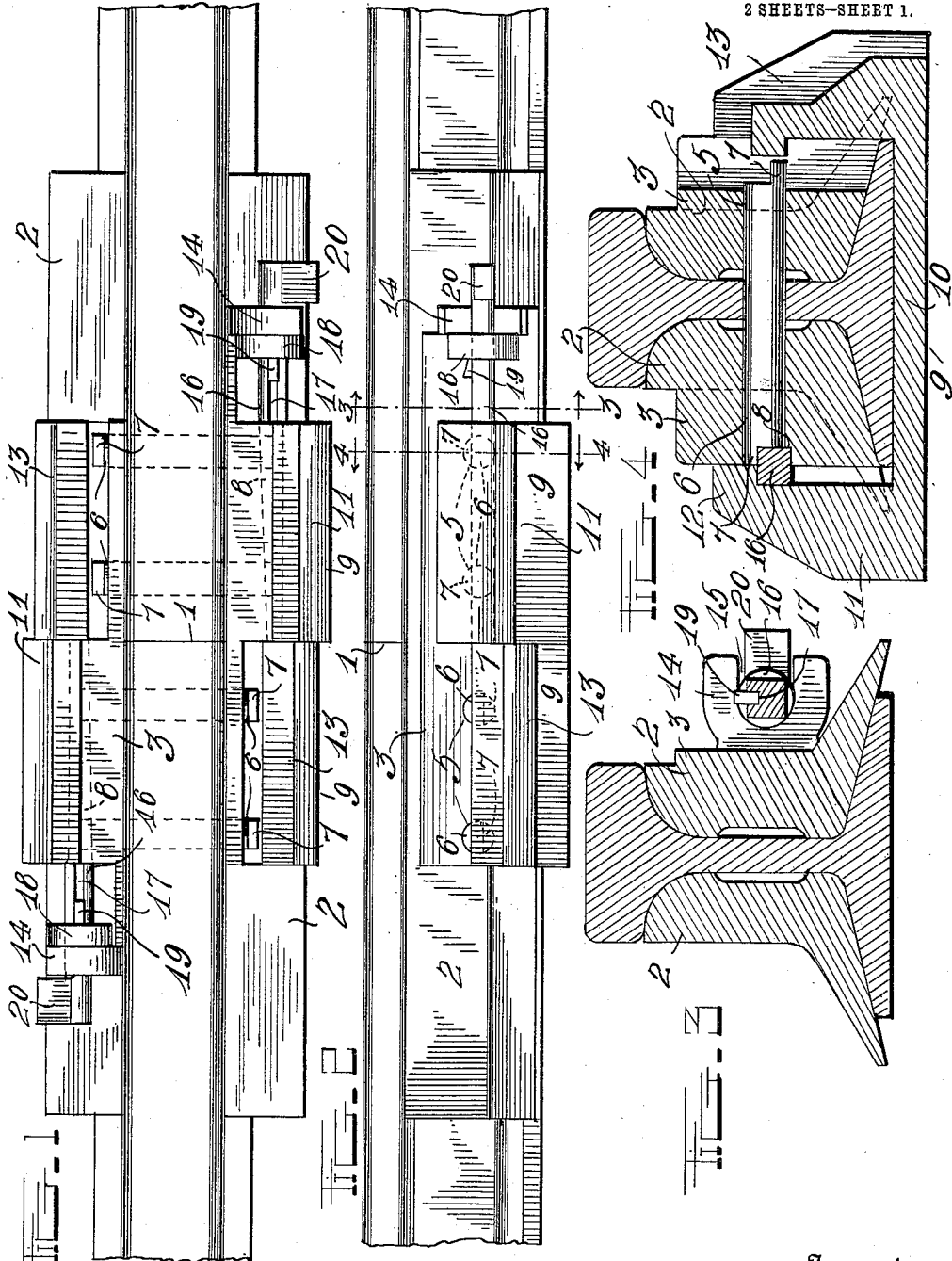


S. E. MOORE.
RAILWAY RAIL FASTENING.
APPLICATION FILED APR. 17, 1911.

1,008,185.

Patented Nov. 7, 1911.

2 SHEETS-SHEET 1.



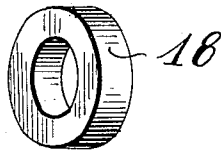
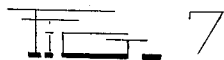
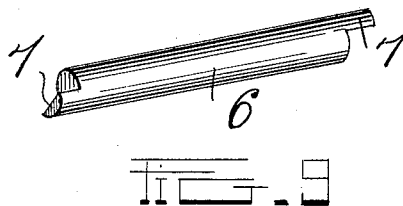
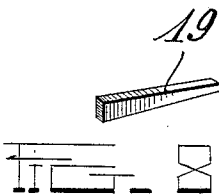
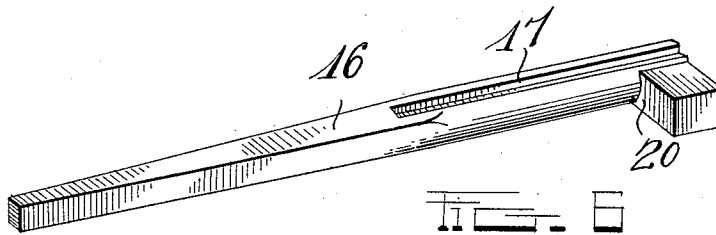
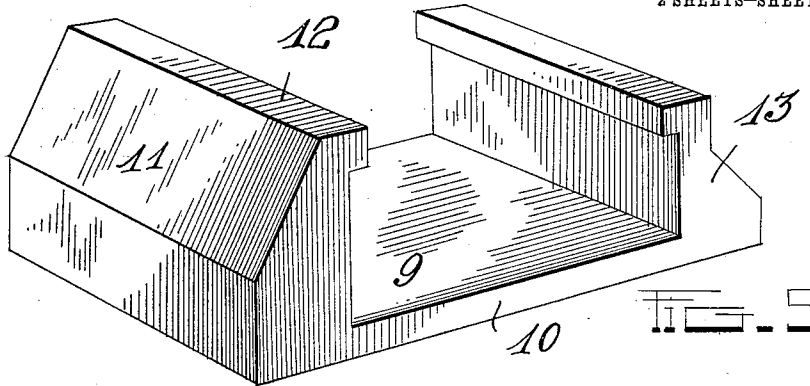
Witnesses
C. R. Hardy
G. B. Hopkins

Inventor
S. E. Moore
by *A. B. Blount & Co.*
Attorneys

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Witnesses
C. R. Hardy
O. B. Hopkins

Inventor
S. E. Moore
by A. B. Wilson & Co.
Attorneys

UNITED STATES PATENT OFFICE.

SIMON E. MOORE, OF CLARINDA, IOWA.

RAILWAY-RAIL FASTENING.

1,008,185.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SIMON E. MOORE, a citizen of the United States, residing at Clarinda, in the county of Page and State of Iowa, have invented certain new and useful Improvements in Railway-Rail Fastenings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to railway rail fastenings.

One object of the invention is to provide a rail fastening by means of which the usual threaded bolts and nuts for fastening the rails are dispensed with, thereby decreasing the amount of labor and expense required in keeping the rail fastening tight.

Another object is to provide a rail fastening device which will be strong and durable in construction, efficient and reliable in operation and in which should the rail fastening pins become broken the fact will be indicated to the track walker or attendant.

With these and other objects in view the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a plan view of the meeting ends of two rails showing the application of my invention; Fig. 2 is a side view of the same; Fig. 3 is a vertical cross section on the line 3—3 of Fig. 2; Fig. 4 is a similar view on the line 4—4 of Fig. 2 looking in the opposite direction from Fig. 3; Fig. 5 is a detail perspective view of one of the combined clamping members and rail chairs of the fastening; Fig. 6 is a similar view of one of the wedges for holding the clamping members in place; Fig. 7 is a similar view of one of the washers for holding the wedges; Fig. 8 is a similar view of one of the keys for fastening the washers in place; Fig. 9 is a similar view of one of the rail fastening pins.

Referring more particularly to the drawings, 1 denotes the meeting ends of two rail sections with the opposite sides of which are engaged fish plates 2, which have formed on their outer sides lateral offsets or enlargements 3, which in the specially constructed

fish plates here shown are formed integral therewith, but which, when arranged on the ordinary fish plates are secured thereto in any suitable manner. In the fish plates and offsets 3 are formed transverse passages 5 which are adapted to aline with the usual bolt holes in the ends of the rail sections and with said passages 5 and the bolt holes in the rails are engaged rail fastening pins 6, having in their opposite ends right angular notches 7 the notch in one end of each pin being on the opposite side from the notch in the other end. The pins 6 are of sufficient length to project through the rails and fish plates one end of the pin being flush with the outer side of the offset of one of the fish plates, while the other end of the pin projects a short distance beyond the offset of the fish plate on the opposite side of the rail. In the outer side of the offset having the flush end of the pin is formed a longitudinally disposed tapered groove or channel 8 with which the right angular notches in the adjacent ends of the pin register and which is adapted to receive a wedging or locking mechanism hereinafter described.

The outer edges of the flanges of the fish plates are cut away and the edge of the flange at this point is flush with the outer side of the offset 3 and adjacent edge of the base flange of the rail. With the cut away portion of the fish plates and engaging the offsets on the opposite sides of the rail are combined clamping members and rail chairs 9, said chairs 9 each comprising a base plate 10 which forms a seat for the rail and an upwardly projecting clamping flange 11 on the upper end of which is formed an inwardly projecting flange 12. The clamping flanges 11 and flanges 12 of the chairs 9 are disposed on opposite sides of the rail and are spaced a short distance from the adjacent surface of the offset 3 of the fish plates, there being two rail chairs for each joint arranged in contact and reversed in position with relation to each other. When thus arranged the lower edges of the flanges 12 will be in line with the upper edges of the grooves 8 in the offsets 3. On the opposite edge of the base plate 10 is formed an upwardly projecting side plate 13 which terminates and is disposed opposite to the adjacent ends of the rail fastening pins 6 shown. The side plates 13 when thus constructed form stops for the adjacent ends

of the rail fastening pins but do not cover or hide said ends, so that the latter remain exposed to the view of the track walker or attendant who may readily determine by the position of the notch in said end of the pin whether or not the pin is broken.

On the outer sides of the fish plates 2 a short distance from one end of the offset 3 are arranged laterally projecting guide lugs 14 having formed therein guide passages 15 with which are slidably engaged wedges 16 in the form of bars which taper toward one end and have formed in one side of their opposite ends a longitudinally extending groove or key-way 17. The wedges 16 when arranged in the guide lugs 14 are driven inwardly and their tapered ends engaged with the tapered grooves 8 in the offsets 3. When thus driven into the grooves 8 the tapered ends of the wedge bars will forcibly engage the adjacent surfaces of the clamping flanges of the rail chairs 9, thus drawing the opposite side flanges of the members into tight engagement with the opposite sides of the fish plates, thereby firmly securing said chairs in place. When the tapered ends of the wedges 16 are thus engaged with the grooves 8, said tapered ends will also engage the right angular notches in the fastening pins, so that said pins will thus be prevented from turning in the rail and fish plates. In the event of any of the pins breaking, one end thereof is held by the wedges 16, while the opposite or free end of the broken pin will soon turn from the jarring action of the trains passing over the rails and thus bring the notch on this end of the pin out of its proper position which would indicate to the track walker or attendant that the pin was broken.

In order to hold the wedges 16 in operative engagement with the grooves 8 and adjacent sides of the clamping flanges 11 I provide stop washers 18 which are loosely engaged with the wedges and which, after the latter have been forced into operative engagement with the offsets and clamping flanges of the fastening are slipped back on the wedges into engagement with the guide lugs 14 and are rigidly secured in this position by means of wedge shaped keys 19 driven into the grooves 17 and into engagement with the washers as shown. By thus fastening the stop washers 18 the wedges are securely fastened and prevented from slipping back through the guide lugs thereby holding the chair in position.

The construction and arrangement of the locking parts for the clamping flanges is exactly the same on the opposite sides of the rail except that the positions of said parts are reversed and operated in opposite directions. When it is desired to remove the fastening devices the keys 19 are first driven back in the grooves 17 and out of engage-

ment with the washers 18 by a punch or other tool, after which the wedges are driven back through the washers and guide lugs 14 by means of a hammer, said wedges being preferably provided on their outer ends with offset laterally extending lugs 20 adapted to receive the blows of the hammer when the wedges are driven back. After the wedges are thus removed the chairs may be forced downwardly out of engagement with the offsets and fish plates thus permitting the latter to be removed and the desired section of the rail taken out.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended claims.

Having thus described my invention, what I claim is:

1. A rail fastening comprising fish plates adapted to be engaged with the opposite sides of the rails, offsets provided on the outer sides of said fish plates, said offsets and plates having formed therein transverse passages adapted to aline with the bolt holes in the ends of the rails, clamping members engaged with said fish plates and offsets, wedges adapted to be forced in between said offsets and clamping members whereby the latter are firmly secured in position, means to lock said wedges in operative positions, and fastening pins arranged in the passages of said fish plates and the adjacent parts of the rails, said pins having one end engaged with and held by said wedges.

2. A rail fastening comprising a pair of fish plates adapted to be engaged with the opposite sides of the rails, lateral offsets provided on the outer sides of said plates, said offsets having formed in their outer sides longitudinally disposed tapered grooves and transverse passages, said passages extending through said fish plates, and in line with the bolt holes in the adjacent ends of the rails, combined clamping members and chairs adapted to be engaged with the lower side of the rails, said clamping members each comprising a base plate, right angularly disposed clamping flanges formed on one edge of said base plate and projecting upwardly adjacent to the outer side of the offsets of said angle plates, said clamping flanges having on their upper edges inwardly extending flanges, the lower edges of which aline with the upper edges of the grooves in said offsets, side plates formed on the opposite edge of said base

plate, wedges adapted to be driven into the grooves of said offsets and into engagement with the adjacent surfaces of said clamping flanges whereby said clamping members are firmly secured in operative position, means to hold said wedges in engagement with said offsets and clamping flanges, and rail fastening pins arranged in the passages in said fish plates and offsets and the bolt holes of said rails, said pins having an operative engagement at one end with said wedges.

3. A rail fastening comprising pairs of fish plates adapted to be engaged with the opposite sides of the rails, lateral offsets provided on the outer sides of said plates, said offsets having formed in their outer sides longitudinally disposed tapered grooves and transverse passages, said passages extending through said fish plates and in line with the bolt holes in the adjacent ends of the rails, combined clamping members and chairs adapted to be engaged with the lower side of the rails, said combined clamping members and chairs each comprising a base plate, right angularly disposed clamping plates formed on one edge of said base plate and projecting upwardly adjacent to the outer side of the offsets of said fish plates, said clamping flanges having on their upper edges inwardly extending flanges the lower edges of which aline with the upper edges of the grooves in said offsets, side plates formed on the opposite edges of said base plate, wedges adapted to be driven into the grooves of said offsets and into engagement with the adjacent surfaces of said clamping flanges whereby said clamping members are firmly secured in operative position, guide lugs formed on the outer sides of said fish plates, adjacent to one end of said offsets, said guide lugs having formed therein guide passages adapted to receive the outer ends of said wedges, stop washers arranged on said wedges and keys adapted to be driven

in between said stop washers and wedges whereby the washers are secured to the wedges and the latter thereby held in position, and rail fastening pins adapted to be engaged with the aligned passages in said fish plates, and offsets, and the bolt holes of said rails.

4. A rail fastening comprising fish plates adapted to be engaged with the opposite sides of the rails, laterally extending offsets formed on the outer sides of said fish plates, said offsets having formed in their outer sides longitudinally disposed tapered grooves, and a series of transversely disposed passages adapted to aline with the bolt holes in the rails, rail fastening pins adapted to be engaged with said passages and bolt holes, said pins having in their ends right angular notches, the notches at one end of the pins being on the opposite side thereof from the notches in the opposite ends, one of said notched ends of the pins being disposed in and flush with the grooves in said offsets of the rails, combined chairs and rail clamping members adapted to be engaged with said fish plates and offsets, wedges adapted to be driven into said grooves and into engagement with the adjacent portions of said clamping members and notched ends of the fastening pins whereby said members and pins are secured in position and whereby should any of the pins be broken, one end of the same will be held by said wedges while the opposite or free ends of the broken pin will be permitted to turn and thus indicate the fact that the pin is broken, and means to lock said wedges in operative position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SIMON E. MOORE.

Witnesses:

C. W. STUART,
C. A. McLUEN.